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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/753,082 | 12/28/2000 | Anthony N. Sarra | 10559/316001/P9677 | 3510 |

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EXAMINER

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| ART UNIT | PAPER NUMBER |
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2114

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|------------------------------|--|
| Office Action Summary | Application No. 09/753,082 | Applicant(s) SARRA ET AL. | |
| | Examiner Dieu-Minh Le | Art Unit 2114 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-14 and 17-34 is/are pending in the application.
- 4a) Of the above claim(s) 2,3,15 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-14, 17-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is response to the amendment filed on 12/19/05 in application 09/753,082.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to

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point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 4-14, 17-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snow (U.S. Patent US 6,640,317) in view of Chung et al. (U.S. Patent 6,105,148 hereafter referred to as Chung).

As per claim 1:

Snow explicitly teach the invention. Snow teaches:

- A method comprising:
- continuously monitoring system calls made by an application [col. 9, line 59 through col. 10, line 36];
- detecting a failure in a system call made by the application [col. 1, lines 28-31 and col. 2, lines 44-50];
- in response to the detecting of the failure in the system call, initiating a repair mechanism to repair the application [col. 1, lines 28-31 and col. 2, lines 44-50].

Snow does not explicitly teach:

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- continuously examining the system calls to determine whether such system calls are executed properly.

However, Snow does disclose capability of:

- A method, system, and apparatus for detecting and repairing damaged computer system [abstract, fig. 4B, col. 1, lines 28-32]

comprising capabilities of:

- *continuously detecting and restoring computer data to a proper condition* [col.2, lines 44-46 and col. 10, lines 20-36];
- *comparing changes, responding to changes, resolving conflicts, and adjusting environment variables for application to be properly performed* [col. 2, lines 48-64 and col. 6, lines 6-18].

In addition, Chung does explicitly disclose:

- A method for checkpointing and restoring a user application process [abstract, fig. 1 and 11-12, col. 1, lines 15-20] comprising:
 - a continuously error detection monitoring application process and determining whether the process is hung or crash [col. 6, lines 18-22];

- *persistently monitoring and intercepting system call to determining and to ensuring (i.e., examining) the system call function consistency* [col. 7, lines 42-63].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made first, to realize the Snow's *continuously detecting and restoring computer data to a proper condition* as well as *comparing changes, responding to changes, resolving conflicts, and adjusting environment variables for application to be properly performed* capabilities do perform such Applicant's continuously examining the system calls to determine whether such system calls are executed properly limitation. This is because Snow clearly applied these capabilities for checking, monitoring, tracking (i.e., examining) system calls or connections in determining whether the system functioned properly; second, by applying the capabilities to *continuously error detection monitoring application process and determining whether the process is hung or crash* as well as *persistently monitoring and intercepting system call to determining and to ensuring (i.e., examining) the system call function consistency* as taught by Chung in conjunction with the method, system, and apparatus for detecting and repairing damaged computer system as

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taught by Snow, the computer processing system can enhance its network operation performance, more specifically to ensuring the error thoroughly detected and corrected via error detection and correction including examining processes.

This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to improve the computer system operation availability and network/system performance therein with a mechanism to enhance the data connectivity, data debugging, data displaying, data reliability, and data throughput which eventually will increase its performance, such as data throughput between internal and external devices.

As per claim 4:

Snow further teaches:

- configuring the device to perform the monitoring from a location remote from the device [col. 6, lines 25-30, col. 11, lines 1-10, col. 11, lines 50-54].

As per claim 5:

Snow further teaches:

- repairing the application with the repair mechanism [col. 1, lines 28-31 and col. 2, lines 44-50].

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As per claims 6-8:

Snow further teaches:

- restarting the application after the repair mechanism repairs the application (i.e., loading initial state and restarting every time loading or reloading application states, system shut down for uploading changes and restart) [fig. 7, col. 3, lines 46-49];
device can determine the repair mechanism [col. 1, lines 28-31 and col. 2, lines 44-50];
- a user of the device can initiate the repair mechanism [col. 1, lines 28-31 and col. 2, lines 44-50].

As per claim 9:

Snow further teaches:

- searching a collection of data including a plurality of repair mechanisms and a plurality of applications associated with each of the plurality of repair mechanisms for a repair mechanism that is configured to repair the application (i.e., collection of application working definitions, checksum, files size, runtime environment, etc...) [fig. 4A-b and fig. 6, col. 9, lines 28-45 and col. 10, lines 7-19].

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As per claim 10:

Snow further teaches:

- notifying a location remote from the device whether the repair mechanism successfully repaired the application [col. 9, lines 59 through col. 10, lines 7 and col. 10, lines 27-31];

As per claims 11-13:

Snow further teaches:

- recording the detected failure in a collection of data at a location remote from the device [col. 10, lines 33-34 and lines 46-47];
- configuring a collection of data at a location remote from the device to include a plurality of repair mechanisms and a plurality of applications, each of the plurality of application associated with a repair mechanisms in the plurality of repair mechanisms [fig. 4A-b and fig. 6, col. 9, lines 28-45 and col. 10, lines 7-19 and lines 40-50];
- transmitting the collection of data to the device [fig. 7, col. 10, lines 51-60].

As per claims 14, 17-22:

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These claims are the same as per claims 1, 4-13. The only minor different is that these claims are directed to a **machine-readable medium** instead of the method for detecting and repairing a failure as described in claims 1, 4-13. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to realized that a **machine-readable medium** is a necessary item for such communication devices including remote device or client-server [Snow, col. 11, lines 50-54] networking system, more specifically, data communication or transmission between client-server system. Since the data transmission or client-server obviously needs a means for instruction or code means resided within the machine-readable medium for performing the data storing, receiving, detecting, tracking, monitoring, repairing, restarting, and transmitting operation capabilities. Therefore, these claims are also rejected under the same rationale applied against claims 1, 4-13.

As per claims 23-30:

These claims are the same as per claims 1, 4-13. The only minor different is that these claims are directed to a system comprising a first, second, and third devices configured to run, track failure of application, etc.. instead of a method for

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monitoring, detecting and repairing application failure.

However, Snow explicitly teaches a client/server environment therein to continuously monitoring, detecting, and correcting/repairing application failures (i.e., client, server, communication device via Internet, etc... as being first, second, third, etc... devices used to supporting application failure detection and correction); Therefore, these claims are also rejected under the same rationale applied against claims 1, 4-13.

As per claims 31-33:

Snow does not explicitly address:

- splicing in a function that determines if an error occurred before the system call is actually placed.

However, Snow does teach capabilities of:

- checksum, detection, and repair with signed and known valid version [col. 9, lines 36-46];
- application modeling, setting changes and evaluation based on proper configuration [col. 10, lines 37-50].

In addition, Chung does explicitly disclose:

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- A method for checkpointing and restoring a user application process [abstract, fig. 1 and 11-12, col. 1, lines 15-20] comprising
- a continuously error detection monitoring application process and determining whether the process is hung or crash [col. 6, lines 18-22];
- persistently monitoring and intercepting system call to determining and to ensuring (i.e., examining) the system call function consistency [col. 7, lines 42-63].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to apply the capabilities of continuously error detection monitoring application process and determining whether the process is hung or crash as well as persistently monitoring and intercepting system call to determining and to ensuring (i.e., examining) the system call function consistency as taught by Chung in conjunction with the method, system, and apparatus for detecting and repairing damaged computer system as taught by Snow, the computer processing system can enhance its network operation performance, more specifically to ensuring the error thoroughly detected and corrected via error detection and correction including examining processes. It is further obvious

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that by utilizing this approach, Snow's modeling function (i.e., slicing in a function) can easily determine any errors that occurred before the system process and can improve the system performance operation

As per claim 34:

Snow explicitly teaches:

- determining when a previous attempt to repair the application was made (i.e., previous attempt to correct damage files by viruses, in addition, Snow clearly demonstrated this limitation via fig. 7, the comparison of changes at runtime and working definitions) [col. 2, lines 35-46 and col. 9, lines 54 through col. 10, lines 50];

In addition, Chung does explicitly disclose:

- A method for checkpointing and restoring a user application process [abstract, fig. 1 and 11-12, col. 1, lines 15-20] comprising
 - Pre-Execution checkpoint subroutine used for restoration process [col. 8, lines 34-44].

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. A shortened statutory period for response to this action is set to expired THREE (3) months, ZERO days from the date of this letter. Failure to respond within the period for response will cause the application to be abandoned. 35 U.S.C. 133.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu-Minh Le whose telephone number is (571) 272-3660. The examiner can normally be reached on Monday - Thursday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571)272-3644. The Tech Center 2100 phone number is (571) 272-2100.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**DIEU-MINH THAI LE
PRIMARY EXAMINER
ART UNIT 2114**

DML

02/17/06